

## Appendix A

## testMAS : Pressure Sintering

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Hello

### Basic Information

One process of forming parts of powdered material parts is by compressing the powdered material, metals, or ceramics, in a die and then sintering the piece thus formed. The powder is molded to the required shape, normally at room temperature, by the application of high-tonnage compacting pressure. No binder or adhesive material is used in this operation. Then, the piece is heat-treated by the process known as sintering to induce optimal strength.

Sintering occurs in a controlled-atmosphere furnace where the green piece (piece straight from compaction) is heated to a temperature close to but not at melting. This is done so that particles may bond by solid state bonding, but not melt. Although both non-metallic and metal powders are used in sintering this web page concentrates on powdered metals.

As applied to ferrous powder metallurgy, the sintering process can be defined as *"a method of controlled atmosphere diffusion bonding particles to produce an engineering material."*